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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

MAYO III, WILLIAM H

ART UNIT PAPER NUMBER

2831

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/537,082

Applicant(s)

REIBEL ET AL.

Examiner

William H. Mayo III

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>June 1, 2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in National PCT Application No. PCT/DE03/10031, filed on September 10, 2003.

Information Disclosure Statement

2. The information disclosure statement filed June 1, 2005 has been submitted for consideration by the Office. It has been placed in the application file and the information referred to therein has been considered.

Drawings

3. The drawings are objected to because Figure 1 lacks the proper cross-hatching which indicates the type of materials, which may be in an invention. Specifically, the cross hatching to indicate the conductive and insulation materials is improper. The applicant should refer to MPEP Section 608.02 for the proper cross-hatching of materials. Correction is required.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the

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amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because the abstract in line 1, states the term "comprising", which is improper language for the abstract. The applicant should replace the term with the term —having—to provide the abstract with proper language. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 13-14, 16, 19-20, 22, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ainsworth et al (Pat Num 4,924,037, herein referred to as Ainsworth). Ainsworth discloses an three dimensionally shaped flat cable (Figs 1-2) having excellent abrasion resistance (Col 1, lines 49-53). Specifically, with respect to claim 13, Ainsworth discloses a cable (Fig 1) comprising a laminate having at least one conductor track (1) enclosed between two insulation layers (2, Col 2, lines 27-33), an adhesive layer (3) and at least one support layer (4) which is connected to the at least one of the insulation layers (2) via the adhesive layer (3), wherein the laminate is capable of being applied to a positive die (i.e. extruder) and shaped by applying heat, radiation, and pressure thereby fixing in a three dimensional shape (Fig 1) by cooling the adhesive layer to harden it (Col 2, lines 50-58). With respect to claim 14, Ainsworth discloses that the cable (Fig 1) has a support layer (4) which is a plastic sheet (Col 2, lines 17-18). With respect to claim 16, Ainsworth discloses that the adhesive layer (3) is composed of an at least of thermoplastic adhesive (Col 2, lines 10-16). the support layer (4) is made of porous layers. With respect to claim 19, Ainsworth discloses that the cable (Fig 1) is at least partially back coated using a thermoplastic (cable has two support layers 4 on the top and bottom). With respect to claim 22, Ainsworth discloses a method of forming a cable (Fig 1) comprising applying a positive die (i.e. extruder) adjusted at room temperature, applying a laminate, wherein the laminate comprises having at least one conductor track (1) enclosed between two insulation layers (2, Col 2, lines 27-33), an adhesive layer (3) and at least one support layer (4) which is connected

to the at least one of the insulation layers (2) via the adhesive layer (3), wherein the laminate is capable of being applied to a positive die (i.e. extruder) and shaping the laminate by applying heat, radiation, and pressure thereby fixing in a three dimensional shape (Fig 1) and cooling the adhesive layer to harden it (Col 2, lines 50-58). With respect to claim 24, Ainsworth discloses that the laminate components are fixed in their shape after being installed separately (i.e. conductor are bonded to two insulation layers, and then the insulated conductors are covered by extrusion, Col 2, lines 42-58). With respect to claim 25, Ainsworth discloses a cable comprising a laminate having at least one conductor track (1) enclosed between two insulation layers (2) forming a cable (Col 2, lines 27-33), an adhesive layer (3) and at least one support layer (4) which is connected to the at least one of the insulation layers (2) via the adhesive layer (3), wherein the laminate is capable of being applied to a positive die (i.e. extruder) and shaped by applying heat, radiation, and pressure thereby fixing in a three dimensional shape (Fig 1) by cooling the adhesive layer to harden it (Col 2, lines 50-58).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 15, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ainsworth (Pat Num 4,924,037). Ainsworth discloses an three dimensionally shaped flat cable (Figs 1-2) having excellent abrasion resistance (Col 1, lines 49-53) as disclosed above with respect to claim 13, wherein the insulation layers (2) are porous PTFE fibers (Col 1, lines 55-63).

However, Ainsworth doesn't necessarily disclose the support layer being a porous layer (claim 15), nor the additional layer being porous (claim 17), nor the porous layer being made of non-woven or fabric of polymer fibers (claim 18).

With respect to claim 15 and 17-18, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the support layer of Ainsworth to be made of porous PTFE fibers since it is known by Ainsworth and in the art of cables that such a material is commonly utilized as cable insulation and jacketing materials because of its superior abrasion resistance and since it has been held to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

12. Claims 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ainsworth (Pat Num 4,924,037) in view of Takahashi et al (EP 0590694, herein referred to as Takahashi). Ainsworth discloses a three dimensionally shaped flat cable (Figs 1-2) having excellent abrasion resistance (Col 1, lines 49-53) as disclosed above with respect to claims 13 and 22 above.

However, Ainsworth doesn't necessarily disclose the flat cable being fitted to electronic components (claim 21), nor the method of utilizing the support layer being metallic during the laminating process (claim 23).

Takahashi teaches a method of making a wiring harness (Figs 1-16), which makes effective usage of a narrow space and overcomes the difficulties facing prior art wire harnesses (Page 2, lines 31-37). Specifically, with respect to claims 21 and 23, Takahashi discloses a method of making a wire harness (Figs 1-16), wherein the wiring 12 are connected to electrical connectors (C1-C3), placed in a positive die (Fig 16), wherein a metallic foil (32) is applied to the insulated conductors (12) by applying heat

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via a heating plate (29) to heat the adhesive layer (26, Col 10, lines 1-55), thereby resulting in the metallic foil layer (32) being bonded to the insulated conductors (12).

With respect to claims 21 and 23, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the wiring harness of Ainsworth to comprise support layer being a metallic foil layer, wherein the conductors are connected to electrical conductors as taught by Takahashi because Takahashi teaches that such a configuration provides a wiring harness (Figs 1-16), which makes effective usage of a narrow space and overcomes the difficulties facing prior art wire harnesses (Page 2, lines 31-37).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are Kihlken et al (Pat Num 5,142,105), Loder et al (Pat Num 5,286,924), Nguyen et al (Pat Num 5,276,759), Nguyen (Pat Num 5,268,531), Nguyen (Pat Num 5,327,513), Yamamoto et al (Pat Num 6,635,826), Elliott et al (Pat Num 4,381,420), Shimizu et al (Pat Num 6,392,155), Lettmann et al (Pat Num 2004/0031619), Luetzow (Pat Num 4,616,717), Segall et al (Pat Num 6,717,057), and Parker (Pat Num 5,554,825), all of which disclose flat cables.

Communication

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (571)-

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272-1978. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (571) 272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



William H. Mayo III
Primary Examiner
Art Unit 2831

WHM III
July 21, 2006